

AMENDMENTS TO THE CLAIMS

Please amend the claims as indicated below:

--1. (Currently amended) A method for enhancing the stability of a triplex formed from one or more nucleic acid strands in a solution in vitro, said method comprising adding to the solution either of the following:

(a) a water structure-making substance [other than an alkali or alkaline earth metal cation, a tetramethylammonium cation, or a polyamine] selected from the group consisting of an organic cation other than tetramethylammonium, a cationic lipid, dimethyl sulfoxide, poly(ethylene glycol), an organic anion, and an inorganic anion; or

(b) a combination of said water structure-making substance and an alkali or alkaline earth metal cation, a tetramethylammonium cation, or a polyamine, wherein the concentration of the water structure-making substance in a) or b) in the solution is at least about one molar.--

--2. (Original) The method of claim 1 wherein the water structure-making substance comprises an organic cation other than tetramethylammonium.--

--3. (Original) The method of claim 2, wherein the organic cation is selected from the group consisting of methylammonium, dimethylammonium, trimethylammonium, and tetraethylammonium.--

--4. (Original) The method of claim 1, wherein the water structure-making substance comprises a cationic lipid.--

--5. (Original) The method of claim 4, wherein the cationic lipid is selected from the group consisting of cetyltrimethylammonium, tridodecylmethylammonium, and 2,3-dioleyloxy-N-[2(sperminecarboxamido)ethyl]-N,N-dimethyl-1-propanammonium.--

--6. (Original) The method of claim 1, wherein the water structure-making substance is selected from the group consisting of dimethyl sulfoxide and poly(ethylene glycol).--

--7. (Original) The method of claim 1, wherein the water structure-making substance comprises an organic anion.--

--8. (Original) The method of claim 7, wherein the organic anion is acetate.--

--9. (Original) The method of claim 1, wherein the water structure-making substance comprises an inorganic anion.--

--10. (Original) The method of claim 9, wherein the inorganic anion is selected from the group consisting of phosphate, sulfate, cyanate, isocyanate and isothiocyanate.--

--11. (Currently amended) The method of claim 1, wherein the water structure-making substance further comprises a water-miscible organic solvent.--

--12. (Currently amended) The method of claim 11, wherein the [water structure-making substance] water-miscible organic solvent comprises an alcohol.--

--13. (Original) The method of claim 12, wherein the alcohol is selected from the group consisting of methanol, ethanol, isopropanol and 2-propanol.--

--14. (Original) The method of claim 1, wherein the third strand comprises DNA or RNA.--

--15. (Original) The method of claim 1, wherein the third strand comprises an unnatural heterocycle base substitute,

a base analog, an unnatural backbone, or a substituent which strengthens binding of the third strand in the triplex.--

--16. (Currently amended) A method for forming a triplex from one or more nucleic acid strands, said method comprising adding to a solution in vitro, in any order, the strand(s) and an effective amount for triplex stabilization of one of the following:

(a) a water structure-making substance [other than an alkali or alkaline earth metal cation, a tetramethylammonium cation, or a polyamine] selected from the group consisting of an organic cation other than tetramethylammonium, a cationic lipid, dimethyl sulfoxide, poly(ethylene glycol), an organic anion, and an inorganic anion; or

(b) a combination of said water structure-making substance and an alkali or alkaline earth metal cation, a tetramethylammonium cation, or a polyamine; and allowing said triplex to form, wherein the concentration of the water structure-making substance in a) or b) in the solution is at least about one molar.--

--17. (Original) The method of claim 16, wherein the water structure-making substance comprises an organic cation other than tetramethylammonium.--

--18. (Original) The method of claim 17, wherein the organic cation is selected from the group consisting of methylammonium, dimethylammonium, trimethylammonium, and tetraethylammonium.--

--19. (Original) The method of claim 16, wherein the water structure-making substance comprises a cationic lipid.--

--20. (Original) The method of claim 19, wherein the cationic lipid is selected from the group consisting of cetyltrimethylammonium, tridodecylmethylammonium, and 2,3-dioleyloxy-N-[2(sperminecarboxamido)ethyl]-N,N-dimethyl-1-propanammonium.--

--21. (Original) The method of claim 16, wherein the water structure-making substance is selected from the group consisting of dimethyl sulfoxide and poly(ethylene glycol).--

--22. (Original) The method of claim 16, wherein the water structure-making substance comprises an organic anion.--

--23. (Original) The method of claim 22, wherein the organic anion is acetate.--

--24. (Original) The method of claim 16, wherein the water structure-making substance comprises an inorganic anion.--

--25. (Original) The method of claim 24, wherein the inorganic anion is selected from the group consisting of phosphate and sulfate.--

--26. (Currently amended) The method of claim 16, wherein the water structure-making substance further comprises a water-miscible organic solvent.--

--27. (Currently Amended) The method of claim 26, wherein the [water structure-making substance] water-miscible organic solvent comprises an alcohol.--

--28. (Original) The method of claim 27, wherein the alcohol is selected from the group consisting of methanol, ethanol, isopropanol and 2-propanol.--

--29. (Original) The method of claim 16, wherein the third strand comprises DNA or RNA.--

--30. (Original) The method of claim 16, wherein the third strand comprises an unnatural heterocycle base substitute,

a base analog, an unnatural backbone, or a substituent which strengthens binding of the third strand in the triplex.--

--31. (Previously presented) The method of claim 1, wherein the water structure-making substance enhances triplex stability in part by effectively decreasing the amount of water at the site of triplex formation and facilitating partial unwinding of the target duplex.--

--32. (Previously presented) The method of claim 16, wherein the water structure-making substance enhances triplex formation in part by effectively decreasing the amount of water at the site of triplex formation and facilitating partial unwinding of the target duplex.--